IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ART UNIT: 2854 EXAMINER: Shema Taian Freeman FIRST NAMED INVENTOR: Zeying Ma SERIAL NO.: 10/803,225 FILED: March 16, 2004 CONF. NO.: 5644 FOR: INK-JET IMAGING ON OFFSET MEDIA DOCKET NO.: 200309561-1	**CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8** DATE OF DEPOSIT: August 1, 2011 I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being submitted on the date indicated above via: ☒ EFS Web ☐ facsimile to 571-273-8300 ☐ the United States Postal Service with sufficient postage as first class mail addressed to: Mail Stop _____, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. /brendawiseman/ Brenda Wiseman

APPELLANTS' APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Mail Stop Appeal Brief – Patents

Dear Sir:

Appellants submit this Appeal Brief in connection with the appeal of the Final Rejection, mailed March 28, 2011, of all pending claims in the above-identified application. A Notice of Appeal was filed on May 31, 2011.

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I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

Appellants and Appellants' legal representatives know of no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-30 were originally presented in the subject application as filed on March 16, 2004. Claims 31-41 were added by amendment filed on February 4, 2008. Claims 2, 7-9, 18, and 23-25 were canceled at various points during prosecution. Thus, claims 1, 3-6, 10-17, 19-22, and 26-41, being the claims on appeal in this application, constitute all of the claims presently pending for consideration.

IV. STATUS OF AMENDMENTS

No amendments to pending claims 1, 3-6, 10-17, 19-22, and 26-41 have been made since the Office Action mailed on March 28, 2011 (hereinafter "Final Office Action"), which was the final rejection of the pending claims.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The independent claims at issue are presented below with page and line numbers (in brackets) indicating at least one location in the specification that supports the recited elements.

Claim 1 sets forth a system for printing durable ink-jet ink images, comprising:

a) offset media [page 3, lines 21-27; page 7, line 6];

b) an aqueous ink-jet ink comprising latex particulates dispersed therein and including a pigment colorant, said ink-jet ink being configured to be ink-jetted onto the offset media [page 3, line 31 to page 4, line 2; page 7, lines 6-8, 25-26; page 9, lines 20-21, 26-27];

c) a fixer composition including a crashing agent that is reactive with a component of the ink-jet ink, said fixer composition being configured to be overprinted or underprinted on the offset media with respect to the ink-jet ink [page 4, lines 21-22, 26-28; page 7, lines 22-25; page 10, lines 28-30]; and

d) a calendering device configured for applying pressure and heat to offset media once the ink-jet ink is ink-jetted thereon, wherein the pressure is mechanical pressure applied at from 500 psi to 3000 psi, and wherein the heat to be applied is from 20°C to 90°C [page 7, lines 5-10; page 15, lines 10-19].

Claim 17 sets forth a method of printing images on offset media, comprising:

a) ink-jetting an aqueous ink-jet ink onto offset media to form a printed image, said ink-jet ink including a pigment colorant and latex particulates dispersed therein [page 7, lines 11-13, 26-28, page 9, lines 20-21, 26-27];

b) underprinting or overprinting a fixer composition with respect to the ink-jet ink, said fixer composition including a crashing agent that is reactive with a component of the ink-jet ink [page 4, lines 21-22, page 10, lines 28-30].

c) applying pressure to the printed image such that a physical property of the printed image is altered by the pressure, wherein the pressure is mechanical pressure applied at from 500 psi to 3000 psi [page 7, lines 13-15, page 15, lines 10-12] ; and

d) applying heat to the printed image, wherein the heat to be applied is from 20°C to 90°C [page 15, lines 14-19].

Claim 31 sets forth a system for printing durable ink-jet ink images, comprising:

a) offset media [page 3, lines 21-27; page 7, line 6];

b) an aqueous ink-jet ink comprising latex particulates dispersed therein and including a pigment colorant, said ink-jet ink being configured to be ink-jetted onto the offset media [page 3, line 31 to page 4, line 2; page 7, lines 6-8, 25-26; page 9, lines 20-21, 26-27];

c) an overcoat composition including a liquid vehicle having latex particulates dispersed therein, said overcoat composition being configured to be overcoated with respect to the ink-jet ink, said latex particulates being present in the overcoat composition at from 0.1 wt% to 15 wt% [page 9, line 31 to page 10, line 6]; and

d) a calendering device configured for applying pressure and heat to offset media once the ink-jet ink is ink-jetted thereon, wherein the pressure is mechanical pressure applied at from 500 psi to 3000 psi, and wherein the heat to be applied is from 20°C to 90°C [page 7, lines 5-10; page 15, lines 10-19].

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issues presented for review are:

(1) whether claims 1, 4, 10, 14, 16-17, 20, 22, 26-27, and 29-30 are unpatentable under 35 U.S.C. § 103(a) as being obvious over U.S. Patent Publication No. 2003/0169320 of Tomotake et al. (hereinafter "Tomotake") in view of U.S. Patent No. 6,443,568 to Askeland et al. (hereinafter "Askeland") and Japan Patent Application No. 2000-103044A of Nakamura et al. (hereinafter "Nakamura");

(2) whether claims 3, 12, 13, and 19 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Tomotake in view of Askeland and Nakamura and further in view of U.S. Patent No. 6,412,935 to Doumaux (hereinafter "Doumaux");

(3) whether claims 5, 6, 15, 21, and 28 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Tomotake in view of Askeland and Nakamura and further in view of U.S. Patent Publication No. 2002/0192003 of Koike et al. (hereinafter "Koike");

(4) whether claim 11 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Tomotake in view of Askeland and Nakamura and further in view of U.S. Patent No. 6,450,632 to Tsang et al. (hereinafter "Tsang");

(5) whether claims 31 and 38-41 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Tomotake in view of Koike and Nakamura;

(6) whether claims 32 and 34 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Tomotake in view of Koike and Nakamura and further in view of Askeland;

(7) whether claims 33, 36, and 37 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Tomotake in view of Koike, Nakamura, and Askeland and further in view of Doumaux; and

(8) whether claim 35 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Tomotake in view of Koike, Nakamura, and Askeland and further in view of Tsang.

VII. ARGUMENT

The shortcomings of the rejections will now be reviewed. Appellants' silence herein with respect to particular statements by the United States Patent and Trademark Office does not indicate agreement with or acquiescence thereto.

A. Appellants' Claimed Invention

Independent claim 31 is directed to a system for printing durable ink-jet ink images. The system includes offset media, an aqueous ink-jet ink having a pigment colorant and dispersed latex particulates, an overcoat composition, and a calendaring device. The ink-jet ink is configured to be ink-jetted onto the offset media. The overcoat composition includes a liquid vehicle having latex particulates dispersed therein and is also configured to be overcoated with respect to the ink-jet ink. The latex particulates are present in the overcoat composition at from 0.1 wt% to 15 wt%. The calendaring device is configured for applying pressure and heat to offset media once the ink-jet ink is ink-jetted thereon. The pressure is mechanical pressure applied at from 500 psi to 3000 psi, and the heat to be applied is from 20-90°C.

B. Rejections Under 35 U.S.C. § 103(a)

1. Requirements Under § 103(a)

Before discussing the rejections under 35 U.S.C. § 103(a), it is thought proper to state what is required to sustain such a rejection. The issue under § 103(a) is whether the USPTO has stated a case of *prima facie* obviousness. The burden under § 103(a) to establish a *prima facie*

case of obviousness rests with the USPTO. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

The framework for an analysis of obviousness as stated and reaffirmed by the U.S. Supreme Court is provided by the following inquiries:

(a) Ascertaining the content and scope of the prior art;

(b) Ascertaining the differences between the claimed invention and the prior art; and

(c) Resolving the level of ordinary skill in the pertinent art.

Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966); see also *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

As a fundamental step in the analysis, the USPTO must establish that every element of the claimed invention is taught or suggested by the prior art. When a combination of references are asserted as prior art against a claim, all of the references must be analogous art with respect to the claimed invention. MPEP 2141.01(a) I. The USPTO must then determine whether the claimed invention would have been obvious to one of ordinary skill in the art and establish a *prima facie* case of obviousness by an explicit showing of a supporting rationale. The Supreme Court has affirmed that a legal conclusion of obviousness cannot be sustained by mere conclusory statements, but rather by "articulated reasoning with some rational underpinning" *KSR* at 418, quoting *In re Kahn,* 441 F.3d 977, 988 (Fed Cir. 2006).

One rationale supporting such a determination is the presence in the prior art of some reason, suggestion, or motivation that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. MPEP

2141. However, such a rationale is lacking where the proposed combination or modification render the prior art invention being modified unsatisfactory for its intended purpose or changes the principle of operation of the prior art invention being modified. MPEP 2143.01 V-VI.

With this brief background in mind, Appellants contend that the USPTO has failed to meet its burden of making a *prima facie* case of obviousness. Particularly, the Examiner has failed to show that the cited reference teaches or fairly suggests each and every element of the present claims so as to support a conclusion of obviousness.

2. Rejection of claims 1, 4, 10, 14, 16-17, 20, 22, 26-27, and 29-30 over Tomotake in view of Askeland and Nakamura

Claims 1, 4, 10, 14, 16-17, 20, 22, 26-27, and 29-30 stand finally rejected under 35 U.S.C. § 103(a) as being obvious over Tomotake in view of Askeland and Nakamura. Appellants submit that the cited references are not fairly combinable so as to support a *prima facie* case of obviousness against Appellants' claims.

Tomotake discloses a method for enhancing gloss in ink-jet images, comprising selecting a parameter (*w*) of an ink based on recording density and colored particle characteristics, and further utilizing particular print head scanning direction protocols. See Abstract; paragraphs 0033-0038. As the Examiner has acknowledged, Tomotake does not teach a fixer composition or the use thereof. As Appellants have noted, one effect of using fixer compositions on a printed image is a significant decrease in the gloss of the image. See, e.g. Appellants' specification, page 7, lines 2-5. In accordance with a method for maximizing gloss, Tomotake avoids the use of fixer compositions, which would be expected to undo the intended benefits of the method. Instead,

Tomotake teaches fixing the printed image through fusion filming using heat and pressure, particularly high heat for a short time. Paragraphs 0141-0142.

The Examiner has cited Askeland to provide a teaching of fixer compositions. Askeland teaches fixer compositions, but does not teach the combination of fixer with calendaring. The Examiner has suggested image durability as a rationale for modifying Tomotake by the inclusion of fixer. Final Office Action, page 3. However, *prima facie* obviousness cannot be established with suggested modifications that would render a prior art invention unsatisfactory for its intended purpose. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Appellants again point out that in view of the known effects of fixer compositions on image gloss, one of skill in the art would view the use of fixer as contrary to the intended purpose of Tomotake, i.e. to maximize gloss. Therefore, there is no rationale in the references or the knowledge in the art to modify Tomotake to include a fixer composition. Appellants have found that employing calendaring under specific conditions can unexpectedly remedy the loss of gloss following use of a fixer. However, this unexpected result is not indicated in the cited references, and cannot be attributed to the teaching of those references. Appellants maintain that it would not be obvious to modify Tomotake to include the fixer of Askeland or any other fixer.

The Examiner has also acknowledged that neither Tomotake nor Askeland teach application of heat in the temperature range required by claims 1 and 17. Rather, Tomotake teaches use of higher heat (100 - 200°C), while Askeland does not teach any particular level of heat. The Examiner has cited Nakamura as allegedly teaching the application of heat set forth in the claims. Nakamura is a Japanese language application that discloses an ink-jet printer having a drying means comprising a heating roller. Paragraph 0036 (machine translation). Appellants note

that, like Tomotake, Nakamura teaches the use of heating to fix printed ink to the paper, but fails to teach the use of this approach in combination with printing a fixer to provide gloss. As such, the combination of Tomotake and Askeland with Nakamura fails to present a *prima facie* case of obviousness against the system of claims 1, 4, 10, 14, 16 or the method of claims 17, 20, 22, 26-27, and 29-30.

In view of the above, Appellants respectfully submit that claims 1, 4, 10, 14, 16-17, 20, 22, 26-27, and 29-30 are allowable, and urge reversal of the rejection.

a. Claims 14 and 27

Appellants submit that the limitations of claims 14 and 27 are patentable over the cited references for reasons in addition to those set forth above. These claims further require that the latex particulates dispersed in the ink-jet ink comprise randomly polymerized copolymers, and further that the latex particulates are predominantly from 20 nm to 500 nm in size and predominantly from 10,000 Mw to 2,000,000 Mw. However, the cited references do not teach particulates having these limitations. According to the Examiner, paragraph 0131 of Tomotake teaches particulates comprising randomly polymerized copolymers. However, Appellants find no such teaching here. The Examiner has suggested further that the molecular weights required by the claims, though absent in said teaching of Tomotake, are nevertheless inherent. Appellants submit that the molecular weight of a copolymeric material is a function of the kind and amounts of constituent monomer species chosen, and that this characteristic can therefore be affirmatively selected. Furthermore, due to the structural differences among monomers, there is not a single first-order correlation between particle size and molecular weight. Therefore, the limitations

taught in Tomotake will not necessarily result in particulates meeting all of the requirements of claims 14 and 27. Appellants maintain that Tomotake does not teach or fairly suggest the elements of these claims.

In view of this, Appellants submit that claims 14 and 27 are patentable over the cited references on its particular merits, and urge reversal of the rejection.

3. Rejection of claims 3, 12, 13, and 19 over Tomotake, Askeland, and Nakamura in view of Doumaux

Claims 3, 12, 13, and 19 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomotake, Askeland, and Nakamura in view of Doumaux. The deficiencies of the combination of Tomotake, Askeland, and Nakamura with respect to the elements required by independent claims 1 and 17 are discussed above and incorporated here.

The Examiner has cited Doumaux to provide a teaching of the particulars of crashing agent recited in claims 3, 12, 13, and 19. However, there is no rationale in Doumaux for combining the teachings Tomotake and Askeland, or teaching or suggestion of the heating required by the claims and lacking in those references. Furthermore, Doumaux is not directed to printing aqueous ink-jet inks on offset media. Rather, the overcoat fluid of Doumaux is specifically directed to use on porous or semi-porous media. See, e.g. column 1, lines 25-42; column 2, lines 35-52. The particular considerations involved in printing with aqueous ink-jet ink on offset media are different from printing with other media, particularly porous media which is completely different from offset media. As Appellants have pointed out, offset media exhibits a smooth non-porous surface and is specifically formulated for offset printing presses. Appellants'

Declaration filed May 26, 2009. Porous media is designed to receive aqueous ink into pores, whereas offset media is typically very smooth and repellant to aqueous ink. The media types are quite opposite from one another.

The Examiner has submitted that "Doumaux is directed to coated plain paper (column 2, lines 52-60)" and that Appellants have defined offset media as merely coated printing media. Final Office Action, page 21. Appellants point out that in discussing coating plain paper, Doumaux expressly teaches that the disclosed coating is porous. Column 2, lines 66-67. As Appellants have pointed out, offset media is non-porous. Appellants maintain that this coated media is different from offset media as Appellants have described and is known in the art. The fixer composition of Doumaux is particularly configured for printing on porous media, and therefore does not meet the requirements of the present claims.

In view of the above, Appellants submit that the cited references do not present a *prima facie* case that the claims 3, 12, 13, and 19 are obvious. Therefore, Appellants respectfully request that the rejection be reversed.

4. Rejection of claims 5, 6, 15, 21, and 28 over Tomotake, Askeland, and Nakamura in view of Koike

Claims 5, 6, 15, 21, and 28 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomotake, Askeland, and Nakamura in view of Koike. The deficiencies of the combination of Tomotake, Askeland, and Nakamura with respect to the elements required by independent claims 1 and 17 are discussed above and incorporated here.

The Examiner has cited Koike to provide a teaching of an overcoat composition comprising latex particulates as required by claims 5, 6, 15, 21, and 28. Appellants submit however, that Koike fails to remedy the deficiencies of Tomotake, Askeland, and Nakamura. Furthermore, Koike does not teach an overcoat composition for overprinting on a printed image as required by the present claims. Rather, Koike teaches a laminated product in which an image is printed on a recording material and then is laminated with a resin image protective layer. Paragraphs 0048, 0061-0064. An overcoat layer can then be disposed on the image protective layer rather than on the printed image. Paragraph 0071. Therefore, Appellants submit that the method and associated apparatus in Koike does not provide the arrangement of elements and steps required by the present claims.

The Examiner has suggested that Appellants' claims does not require contact between the overcoat composition and the ink-jet ink. Final Office Action, page 21. Appellants have defined "overprinting" and "underprinting" of two printing solutions "with respect to" one another as being when "a second printing solution is printed onto a first printing solution." Appellants' specification, page 5, lines 18-23. Appellants submit that according to its ordinary meaning, "onto" indicates direct printing of a solution onto another printed solution. Therefore, the arrangement required by the claims does involve direct contact, and Appellants maintain that Koike fails to teach that arrangement.

In view of the above, Appellants submit that the cited references do not present a *prima facie* case that the claims 5, 6, 15, 21, and 28 are obvious. Therefore, Appellants respectfully request that the rejection be reversed.

a. Claims 15 and 28

Appellants submit that the limitations of claims 14 and 27 are patentable over the cited references for reasons in addition to those set forth above. These claims further require that the latex particulates dispersed in the overcoat composition comprise randomly polymerized copolymers, and further that the latex particulates are predominantly from 20 nm to 500 nm in size and predominantly from 10,000 Mw to 2,000,000 Mw. However, the cited references do not teach particulates having these limitations. Here the Examiner again cites paragraph 0131 of Tomotake as teaching particulates comprising randomly polymerized copolymers. As Appellants have explained above with regard to claims 14 and 27, the cited passage does not teach this. The Examiner has again suggested here that the molecular weights required by the claims, though absent in said teaching of Tomotake, are nevertheless inherent. Appellants reiterate that the molecular weight of a copolymeric material is a function of the kind and amounts of constituent monomer species chosen, and that this characteristic can therefore be affirmatively selected. Furthermore, due to the structural differences among monomers, there is not a single first-order correlation between particle size and molecular weight. Therefore, the limitations taught in Tomotake will not necessarily result in particulates meeting all of the requirements of claims 15 and 28. Appellants maintain that Tomotake does not teach or fairly suggest the elements of these claims.

In view of this, Appellants submit that claims 15 and 28 are patentable over the cited references on its particular merits, and urge reversal of the rejection.

5. Rejection of claim 11 over Tomotake, Askeland, and Nakamura in view of Tsang

The Examiner has rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Tomotake in view of Askeland and Nakamura and further in view of Tsang. The deficiencies of the combination of Tomotake, Askeland, and Nakamura with respect to the elements required by claim 1 are discussed above and incorporated here. Those deficiencies also apply to the rejection of claim 11, which depends from claim 1.

The Examiner has cited Tsang to provide a teaching of cationic polymer crashing agents recited in claim 11. However, Tsang also fails to remedy the deficiencies of Tomotake, Askeland, and Nakamura. Appellants are not the first to use crashing agents *per se*, but rather, claim the inventive combination set forth in the claims. Therefore, Appellants submit that the cited combination of references fails to present a *prima facie* case of obviousness against claim 11. Reversal of the rejection is respectfully urged.

6. Rejection of claims 31 and 38-41 over Tomotake in view of Koike and Nakamura

Claims 31 and 38-41 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomotake in view of Koike and Nakamura. The Examiner has acknowledged that Tomotake fails to teach the application of heat in the temperature range required by claim 31. The Examiner has cited paragraph 0039 of Nakamura as allegedly teaching the heat application step of claim 31. At paragraph 0039 Nakamura teaches a system that includes a heating roller having a working range of from 80-150 °C. However, Nakamura does not teach the application of any particular temperature. As discussed above, Tomotake teaches applying as intense a heat as can be employed without damaging the medium. As such, the value 100°C is taught in

Tomotake as a strict minimum temperature, as using lower heat in the disclosed method would likely be unsuccessful. Therefore, the combination of Tomotake with Nakamura still cannot fairly considered to teach or suggest the application of heat in the range required by the claims. On the contrary, Nakamura simply provides a heating roller that could be used according to the teaching of Tomotake, i.e. application of temperatures above 100°C.

Koike does not remedy the deficiency of Tomotake and Nakamura. Furthermore, as discussed above, Koike also does not teach an overcoat composition for overprinting with respect to the ink-jet ink as required by the present claims. As such, Tomotake and Koike fail to teach or suggest every element of claims 31 and 38-41.

In view of the above, Appellants submit that claims 31 and 38-41 are patentable over the cited references, and respectfully urge the reversal of the rejection.

7. Rejection of claims 32 and 34 over Tomotake in view of Koike, Nakamura, and Askeland

Claims 32 and 34 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomotake in view of Koike and Nakamura and further in view of Askeland. The deficiencies of the combination of Tomotake, Nakamura and Koike with respect to the elements required by claim 31 are discussed above and incorporated here. Those deficiencies also apply to the rejection of claim 32, which depends from claim 31. As also discussed above, there is insufficient rationale to support modifying Tomotake to include the teaching of Askeland. That is, including the use of fixer in the method of Tomotake would be expected to render an unsuccessful result without recourse to the teaching of Appellants' specification. Furthermore, the combination of Nakamura with Tomotake and Koike fails to teach or suggest the specific temperature range required by the

claims. Therefore, the cited references do not present a *prima facie* case of obviousness against the claims at issue.

In view of the above, Appellants respectfully submit that claims 32 and 34 are patentable over the cited references, and urge reversal of the rejection.

8. Rejection of claims 33, 36, and 37 over Tomotake, Koike, Nakamura and Askeland in view of Doumaux

Claims 33, 36, and 37 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomotake in view of Koike, Nakamura, and Askeland and further in view of Doumaux. The deficiencies of the combination of Tomotake, Askeland, Nakamura, and Koike with respect to the elements required by claims 31 and 32 are discussed above and incorporated here. As each of the rejected claims depends from claim 32, those deficiencies also apply to this rejection.

The Examiner has cited Doumaux to provide a teaching of the particulars of crashing agent recited in claims 33, 36, and 37. However, there is no teaching in Doumaux that remedies the deficiencies discussed above. Furthermore, for the reasons cited above, Appellants submit that Doumaux is nonanalogous art and therefore inappropriate to a case of obviousness of the present claims.

In view of the above, Appellants respectfully submit that claims 33, 36, and 37 are patentable over the cited references, and urge reversal of the rejection.

9. Rejection of claim 35 over Tomotake, Koike, Nakamura, and Askeland in view of Tsang

Claim 35 stands finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomotake in view of Koike, Nakamura, and Askeland and further in view of Tsang. The deficiencies of the combination of Tomotake, Koike, Nakamura, and Askeland with respect to the elements required by claim 31 are discussed above and incorporated here. Those deficiencies also apply to the rejection of claim 35, which depends from claim 31.

The Examiner has cited Tsang to provide a teaching of cationic polymer crashing agents recited in claim 11. However, Tsang fails to remedy the particular deficiencies discussed above. Therefore, Appellants submit that the cited combination of references fails to present a *prima facie* case of obviousness against claim 35. Appellants respectfully urge reversal of this rejection.

C. Conclusion

In conclusion, Appellants respectfully submit that the claims at issue are patentably distinct from the asserted prior art references. Particularly, the cited references fail to establish a *prima facie* case of obviousness of any of the claims at issue, as those references fail to fairly teach or suggest every element of the claims. Since the Patent Office has not met its initial burden of establishing obviousness, the Appellants respectfully submit that all pending rejections are improper, and should be overturned.

Dated this 1st day of August, 2011.

/garypoakeson/

Gary P. Oakeson
Attorney for Appellants
Registration No. 44,266

Of:
THORPE NORTH & WESTERN, LLP
8180 South 700 East, Suite 350
Sandy, Utah 84070
Telephone: (801) 566-6633
Facsimile: (801) 566-0750

On Behalf Of:
HEWLETT-PACKARD COMPANY
P.O. Box 272400
Fort Collins, CO 80527-2400

VIII. CLAIMS APPENDIX

The following is a clean listing of Appellants' claims that are involved in the current Appeal (i.e. claims canceled or withdrawn during prosecution are not listed):

1. A system for printing durable ink-jet ink images, comprising:

a) offset media;

b) an aqueous ink-jet ink comprising latex particulates dispersed therein and including a pigment colorant, said ink-jet ink being configured to be ink-jetted onto the offset media;

c) a fixer composition including a crashing agent that is reactive with a component of the ink-jet ink, said fixer composition being configured to be overprinted or underprinted on the offset media with respect to the ink-jet ink; and

d) a calendering device configured for applying pressure and heat to offset media once the ink-jet ink is ink-jetted thereon, wherein the pressure is mechanical pressure applied at from 500 psi to 3000 psi, and wherein the heat to be applied is from 20°C to 90°C.

3. A system as in claim 1, wherein the crashing agent is present in the fixer composition at from 0.1 wt% to 10 wt%.

4. A system as in claim 1, wherein the latex particulates are dispersed in the ink-jet ink at from 0.1 wt% to 15 wt%.

5. A system as in claim 1, further comprising an overcoat composition including a liquid vehicle having latex particulates dispersed therein, said overcoat composition being configured to be overcoated with respect to the ink-jet ink.

6. A system as in claim 5, wherein the latex particulates in the overcoat composition are present in the overcoat composition at from 0.1 wt% to 15 wt%.

10. A system as in claim 1, wherein the crashing agent is selected from the group consisting of cationic polymers, multivalent metal ions or ionic groups, acids, and combinations thereof.

11. A system as in claim 10, wherein the crashing agent is a cationic polymer selected from the group consisting of polyvinylpyridines, polyalkylaminoethyl acrylates, polyalkylaminoethyl methacrylates, poly(vinyl imidazole), polyethyleneimines, polybiguanides, polyguanides, polyvinylamines, polyallylamines, polyacrylamines, polyacrylamides, polyquaternaryamines, cationic polyurathenes, aminecelluloses, polysacchride amines, and combinations thereof.

12. A system as in claim 10, wherein the crashing agent is a multivalent metal ion or ionic group is provided by a member selected from the group consisting of multivalent metal nitrates, EDTA salts, phosphonium halide salts, organic acids, chloride salts, and combinations thereof.

13. A system as in claim 10, wherein the crashing agent is an acid selected from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid, caprioc acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p-bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5-sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine,

alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α-alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof.

14. A system as in claim 4, wherein the latex particulates comprise randomly polymerized copolymers, said latex particulates being predominantly from 20 nm to 500 nm in size and predominantly from 10,000 Mw to 2,000,000 Mw.

15. A system as in claim 6, wherein the latex particulates in the overcoat composition comprise randomly polymerized copolymers, said latex particulates being predominantly from 20 nm to 500 nm in size and predominantly from 10,000 Mw to 2,000,000 Mw.

16. A system as in claim 1, wherein the calendering device includes a pair of rollers that are configured to apply pressure and heat to the offset media once the ink-jet ink is printed thereon.

17. A method of printing images on offset media, comprising:

a) ink-jetting an aqueous ink-jet ink onto offset media to form a printed image, said ink-jet ink including a pigment colorant and latex particulates dispersed therein;

b) underprinting or overprinting a fixer composition with respect to the ink-jet ink, said fixer composition including a crashing agent that is reactive with a component of the ink-jet ink.

c) applying pressure to the printed image such that a physical property of the printed image is altered by the pressure, wherein the pressure is mechanical pressure applied at from 500 psi to 3000 psi; and

d) applying heat to the printed image, wherein the heat to be applied is from 20°C to 90°C.

19. A method as in claim 17, wherein the crashing agent is present in the fixer composition at from 0.1 wt% to 10 wt%.

20. A method as in claim 17, wherein the latex particulates are dispersed in the ink-jet ink at from 0.1 wt% to 15 wt%.

21. A method as in claim 17, further comprising the step of overcoating the ink-jet ink that was ink-jetted on the offset media with an overcoat composition, said overcoat composition including from 0.1 wt% to 15 wt% of latex particulates.

22. A method as in claim 17, wherein the pigment colorant is present in the ink-jet ink at from 0.5 wt% to 10 wt%.

26. A method as in claim 17, wherein the crashing agent is selected from the group consisting of cationic polymers, multivalent metal ions or ionic groups, acids, and combinations thereof.

27. A method as in claim 20, wherein the latex particulates comprise randomly polymerized copolymers, said latex particulates being predominantly from 20 nm to 500 nm in size and predominantly from 10,000 Mw to 2,000,000 Mw.

28. A method as in claim 21, wherein the latex particulates in the overcoat composition comprise randomly polymerized copolymers, said latex particulates being predominantly from 20 nm to 500 nm in size and predominantly from 10,000 Mw to 2,000,000 Mw.

29. A method as in claim 17, wherein the physical property is smoothness, wherein upon applying pressure, the printed image is modified from having a textured profile to a smoother profile.

30. A method as in claim 17, wherein the physical property is flow, wherein upon applying pressure, the printed image is temporarily modified from a more solid configuration to a more liquid configuration.

31. A system for printing durable ink-jet ink images, comprising:

a) offset media;

b) an aqueous ink-jet ink comprising latex particulates dispersed therein and including a pigment colorant, said ink-jet ink being configured to be ink-jetted onto the offset media;

c) an overcoat composition including a liquid vehicle having latex particulates dispersed therein, said overcoat composition being configured to be overcoated with respect to the ink-jet ink, said latex particulates being present in the overcoat composition at from 0.1 wt% to 15 wt%; and

d) a calendering device configured for applying pressure and heat to offset media once the ink-jet ink is ink-jetted thereon, wherein the pressure is mechanical pressure applied at from 500 psi to 3000 psi, and wherein the heat to be applied is from 20°C to 90°C.

32. A system as in claim 31, further comprising a fixer composition including a crashing agent that is reactive with a component of the ink-jet ink, said fixer composition being configured to be overprinted or underprinted on the offset media with respect to the ink-jet ink..

33. A system as in claim 32, wherein the crashing agent is present in the fixer composition at from 0.1 wt% to 10 wt%.

34. A system as in claim 32, wherein the crashing agent is selected from the group consisting of cationic polymers, multivalent metal ions or ionic groups, acids, and combinations thereof.

35. A system as in claim 32, wherein the crashing agent is a cationic polymer selected from the group consisting of polyvinylpyridines, polyalkylaminoethyl acrylates, polyalkylaminoethyl methacrylates, poly(vinyl imidazole), polyethyleneimines, polybiguanides, polyguanides, polyvinylamines, polyallylamines, polyacrylamines, polyacrylamides, polyquaternaryamines, cationic polyurathenes, aminecelluloses, polysacchride amines, and combinations thereof.

36. A system as in claim 32, wherein the crashing agent is a multivalent metal ion or ionic group is provided by a member selected from the group consisting of multivalent metal nitrates, EDTA salts, phosphonium halide salts, organic acids, chloride salts, and combinations thereof.

37. A system as in claim 32, wherein the crashing agent is an acid selected from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid, caproic acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p-bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5-sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α-alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof.

38. A system as in claim 31, wherein the latex particulates are dispersed in the ink-jet ink at from 0.1 wt% to 15 wt%.

39. A system as in claim 38, wherein the latex particulates in the ink-jet ink comprises randomly polymerized copolymers, said latex particulates being predominantly from 20 nm to 500 nm in size and predominantly from 10,000 Mw to 2,000,000 Mw.

40. A system as in claim 31, wherein the latex particulates in overcoat composition comprises randomly polymerized copolymers, said latex particulates being predominantly from 20 nm to 500 nm in size and predominantly from 10,000 Mw to 2,000,000 Mw.

41. A system as in claim 31, wherein the calendering device includes a pair of rollers that are configured to apply pressure and heat to the offset media once the ink-jet ink is printed thereon.

IX. EVIDENCE APPENDIX

(None)

X. RELATED PROCEEDINGS APPENDIX

(None)